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College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

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a newsletter for commercial growers of fruit and vegetable crops



"We are what we repeatedly do. Excellence, then, is not an act, but a habit." Aristotle

Address any questions or comments regarding this newsletter to the individual authors listed after each article or to its editor, Rick Weinzierl, 217-333-6651, weinzier@uiuc.edu. The ***Illinois Fruit and Vegetable News*** is available on the web at: http://www.ipm.uiuc.edu/ifvn/index.html . To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or address above.

This issue's words of wisdom ... which usually means the jokes ... are at the end of newsletter. Check the last page.

In this issue ...

Crop and Regional Reports

In southern and southwestern Illinois,

Field prep is underway throughout the southern region, and pruning of fruit trees continues. Temperatures have been all over the board—well above, well below, and sometimes right at the average temperature. Some of the early spring flowers have been tip burned by frost. Temperatures hovered around 20 degrees F in the St. Louis area on Sunday evening, March 13, but the next few days warmed up a bit – lows hover right around freezing with daytime highs in the 40's up to the 60s.

Be sure to check the list of upcoming programs on the next page... twilight meetings, orchard tours, and viticulture workshops have been scheduled at various locations in or near the southern region.

Elizabeth Wahle (618-692-9434; wahle@uiuc.edu)

In northern Illinois, day temperatures in the upper 20s to 50s, and night temperatures in the low teens to low 30s characterized the first half of March. The area recorded unusually high temperatures on March 6, with highs in the 60s to low 70s. The region received about 0.2-0.3 inches of rainfall, and 0.6-3.0 inches of snow in early March. Pruning of brambles, grapes, and tree fruits is ongoing.

Maurice Ogutu (708-352-0109; ogutu@uiuc.edu)

Upcoming Meetings and Programs

Here are a few dates to add to your calendar. Additional details for programs in the southern region will be posted as they become available at http://web.extension.uiuc.edu/regions/hort/ . Contact: Elizabeth Wahle at wahle@uiuc.edu or 618-692-9434

April 9, 2005. Viticulture Workshop
9:00-11:30 a.m. Hill Prairie Vineyard and Winery, Oakford, Illinois. RSVP to Elizabeth Wahle.

April 14, 2005. Twilight Meeting for Tree Fruit Growers
5:30-7:30 p.m. Meet where Hagan, Toppmeyer, Fortschneider, and Weigel Orchards intersect, just southeast of Brussels on the Illinois River Road.

May 13, 2005. Mississippi Valley Peach Orchard Tour (Kentucky's year to host, Illinois was last year)
Jackson's Orchard and Nursery, Bowling Green, Kentucky.

May 21, 2005. Viticulture Workshop
9:00-11:30 a.m. Central Illinois -Location to be announced. RSVP to Elizabeth Wahle.

May 26, 2005. Twilight Meeting for Tree Fruit Growers
5:30-7:30 p.m. Kamp's Orchard, southeast of Brussels just off the Illinois River Road.

June 16, 2005. ISHS Summer Orchard Day
Edwards Apple Orchard, Poplar Glove, IL.

June 25, Viticulture Workshop
9:00-11:30 a.m. Hill Prairie Vineyard and Winery, Oakford Illinois. RSVP to Elizabeth Wahle

Elizabeth Wahle (618-692-9434; wahle@uiuc.edu)

Notes from Chris Doll

What began as a potentially very early spring has now evolved into maybe a "normal" spring. March has been relatively cool, and recent days have seen lows near freezing. As a result, peach and apple buds show only slight swelling, and the early bloom of pussy willow has not gone much further. Chris Eckert has reported that green tip apple sprays were applied on March 16, 2004, and the Back 40 was sprayed on the 18th. We are both ready to spray when needed. My records show that the 1/2-inch green dates in recent years were 3/31/04, 3/25/03, 4/9/02 and 4/7/01. The rest period is over and the next warm spell will result in rapid bud growth.

Several blocks of dwarfed apples were inspected during the past week, and flower bud set is excellent. M9 and B9 really induce flower bud set. For the more vigorous larger trees, the set is affected by last years crop and weather. Reports continue to come in about variable bud kill of peaches. Some blocks of Red Haven are 90 percent alive and others are nearly a total loss, with Loring in the same orchard showing enough live buds for a crop. The bud kill happened on January 17 at temps of 0 to +4, but only 5 days after a 70-degree day.

Soil conditions have firmed and dried in March, and we have soils ready for planting. Early planting usually makes for optimum growth, especially if soil conditions are optimum. But I have seen mistakes from rushing the planting without proper soil preparation and tree placement at improper depth. Apple trees should be planted 1-2 inches deeper than grown in the nursery, and the bud union above the ground line far enough to prevent scion rooting in future years. Peach trees should be planted at near the same depth as they were in the nursery. Deep planting of peach trees can lead to trees failing to make brace roots for anchorage and therefore the trees tend to wallow.

It is the time of the year that some branching induction attempts can be made on young, vigorous shoots of apple trees, especially varieties like Reds, Granny Smith and Fuji. Bud notching, the art of using a sharp knife to slice into the xylem just above a bud on a long (18-36 inch) shoot, is done sometime ahead of bud break. The second method is mix Promalin at 0.3 pint to 1.0 pint of latex paint with one percent nonionic wetting agent (Pennsylvania Tree Fruit Production Guide, page 46) and apply to one-year old shoots where branching is needed. Use a brush or sponge and time it when terminal buds begin to swell.

Thornless blackberries need to be pruned and tied as soon as possible to avoid breaking off many of the emerging buds which will develop into the flowering shoots. The same reason is why grapes are pruned early, as the emerging grape buds are very easily knocked off.

A few notes from the 2005 Illinois Small Fruit and Strawberry School are in order. An excellent Proceedings was published that included articles on blackberries, blueberries and plasticulture strawberries among others on varieties. It should be available from Bronwyn Aly at the Dixon Springs Agr. Center if she is contacted at baly@uiuc.edu. Dr. Barclay Poling of North Carolina said that good plastic laying is very important for success, as is freeze and frost control. Dr. John Strang of Kentucky described their trellising system for thornless blackberries and the use of Osmocote 15-9-12 for fertilizing blueberries. Our Dr. Elizabeth Wahle laid out the essentials for planting blueberries in Illinois, and Dr. Bob Skirvin of Illinois has included write-ups of varieties of strawberries, brambles, and grapes. The strawberry variety list includes Earliglow and Honeoye, which have been grown since 1975 and 1979 respectively.

Apple variety enthusiasts should be interested in an article in the Journal of the American Pomological Society (Volume 59, Number 1, January 2005), titled “Performance of Apple Cultivars in the 1995 Ne-183 Regional Project Planting: III. Fruit Sensory Characteristics” (pages 28-43). It summarizes the work of 10 researchers across the U. S. and Canada on sensory scores and fruit appearance of 19 varieties. Under crispness, Creston was first, followed by Honeycrisp and Goldrush. For juiciness, Creston, Honeycrisp, and Shizuka were followed by Ginger Gold and Fuji Red Sport #2. Sweetness awards were taken by Orin and Fuji Red Sport #2, with Gold Rush being last. Honors for appearance tended toward Enterprise and Golden Supreme. However, the conclusion was that "no single cultivar developed superior sensory qualities across all sites."

Chris Doll

Degree-Day Accumulations

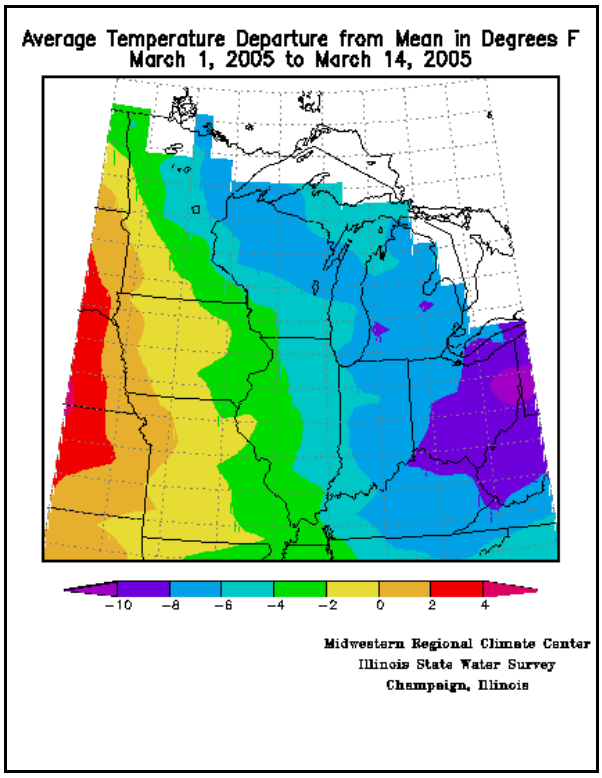


Figure 1. Average temperature departure from historic means, March 1-14, 2005.

Average winter temperatures for 2004-05 were higher than they were last year and were warmer than normal. However, we are considerably behind in degree-day accumulations compared to one year ago. How is that possible you might ask? Temperatures in March thus far have been 2 to 6 degrees below normal across the state (Figure 1). Degree-day accumulations from January 1 through mid-March of 2004 and 2005 are compared in Table 1. Throughout the growing season you can check on degree-day accumulations on insects and growing degree-days for crops at the Degree-Day Calculator (www.ipm.uiuc.edu/degreedays).

Table 1. Degree-day accumulations, January 1 through March 14 (2004 and 2005).

Site No.	Station	County	DD, Base 50 Jan 1 - Mar 14 2004	DD, Base 50 Jan 1 - Mar 14 2005	Projected DD, Base 50 Jan 1 - Mar 21 20045	Projected DD, Base 50 Jan 1 - Mar 28 20045
1	Freeport	Stephenson	14	5	10	20
2	Dekalb	Dekalb	24	5	12	24
3	St. Charles	Kane	23	8	15	25
4	Monmouth	Warren	41	13	23	38
5	Peoria	Tazewell	44	19	30	47
6	Stelle	Ford	63	11	21	35
7	Kilbourne	Mason	71	34	49	70
8	Bondville	Champaign	43	20	32	47
9	Champaign	Champaign	53	24	37	53
10	Perry	Pike	66	34	49	69
11	Springfield	Sangamon	67	31	46	65
12	Brownstown	Fayette	74	41	59	81
13	Olney	Richland	92	56	73	94
14	Belleville	St. Clair	113	68	88	112
15	Rend Lake	Jefferson	120	75	96	123
16	Fairfield	Wayne	115	69	89	115
17	Carbondale	Jackson	141	90	111	137
18	Dixon Springs	Pope	102	82	106	135

The degree-day calculator is an internet tool developed to assist Illinois producers in making pest management decisions using pest development models and Illinois climate data. A collaborative effort between the Integrated Pest Management program (Department of Crop Sciences, University of Illinois) and the Illinois State Water Survey (Illinois Department of Natural Resources), the degree-day calculator provides users with the ability to determine degree-day accumulations for specific pests of field crops, fruits, and vegetables in Illinois. The calculator tracks and projects the growth of insect pests and crops in Illinois. It is designed to help the user determine when to monitor for specific insect stages that may be approaching in their region and aid in subsequent management decisions. Just as importantly, it provides this information in an up-to-date format that is designed to be user-friendly.

Currently, degree-day calculations can be generated for 30 different insects at each of 19 weather sites. The degree-day calculator can also generate contour maps for specific insects and base temperatures. If the user wants to compare degree-day accumulations between different locations, the map function affords them this option. Whether determining degree-days at one site or creating a contour map, both of these functions can project degree-day accumulations one and two weeks into the future. Information is also provided to describe the relationship between insect developmental stages and degree-day

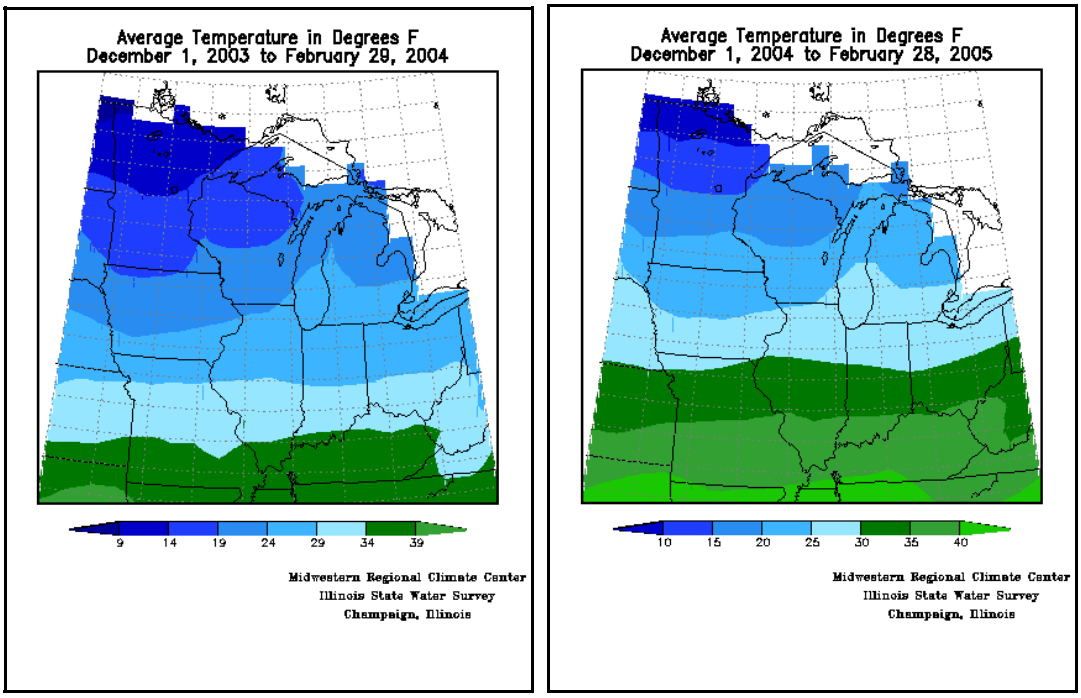
accumulations as well as a background section on how degree-days are calculated. Additional information on the insects life cycle, potential injury, scouting procedures, and management can be found via a link to an insect fact sheet on the IPM web site.

During the course of the spring and summer, we will make reference to degree-days and approaching insect stages. We hope that you too take advantage of this tool and use it to stay on top of developing insect problems.

Kelly Cook (217-333-4424; kcook8@uiuc.edu)

Vegetable Production and Pest Management

Winter Temperatures and Corn Flea Beetle



Figures 2 and 3. Average winter temperatures for 2003-2004 and 2004-2005.

Average winter temperatures for December through February in Illinois were approximately five degrees warmer than they were a year ago. These warmer winter temperatures favored increased survivorship of the corn flea beetle and the disease-causing bacteria it vectors.

Corn flea beetles are the primary vector of *Erwinia stewartii*, the bacterium that causes Stewart's wilt of corn. The bacterium survives the winter in the gut of the corn flea beetle, and survival of the corn flea beetle is dependent on winter temperatures. Warmer winters result in greater survivorship of corn flea beetles, thus increasing the potential for Stewart's wilt. Using the average temperature of December, January, and February, the potential of Stewart's wilt can be predicted (Table 2).

Table 2. Projected risk of Stewart's wilt based on the average temperatures of December, January, and February.

Average temperature of December, January, & February	Probably of early season wilt	Probably of late season blight
<27˚ F	Absent	Trace, at most
27 - 30˚ F	Light	Light to Moderate
30 - 33˚ F	Moderate	Moderate to Severe
>33˚ F	Severe	Severe

Corn flea beetles become active in the spring when temperatures rise above 65˚F. They feed on and transmit *E. stewartii* to seedling corn plants. The bacterium can spread systemically throughout the plant. Although most commercial field corn hybrids are resistant to Stewart's wilt, the disease is still a concern for susceptible seed corn inbreds and sweet corn hybrids.

There are two phases of Stewart's wilt, the seedling wilt phase and the leaf blight phase. The seedling wilt stage occurs when seedlings become infected at or before the V5 stage. The growing point is easily infected. The vascular system becomes plugged with bacteria, causing the seedling to wilt, become stunted, and die. Infections of older corn plants usually result in the development of the leaf blight phase of Stewart's wilt. This phase is characterized by long, yellow to chlorotic streaks with wavy margins along the leaves. The late infection phase or "leaf blight phase" of Stewart's wilt occurs after tasseling and is generally not a concern in sweet corn because ears are harvested before damage occurs.

Based on the recent winter temperatures from the Midwest Regional Climate Center, estimates of early season Stewart's wilt are shown in Table 3. Remember, however, that these are only predictions; numbers of surviving corn flea beetles are not known. More information on the corn flea beetle and Stewart's wilt can be found on a new corn flea beetle fact sheet (http://www.ipm.uiuc.edu/vegetables/insects/corn_flea_beetle.pdf) and the sweet corn disease nursery website (http://sweetcorn.uiuc.edu/stewarts.html).

Table 3. 2005 early season Stewart's wilt predictions.

Location	Average Temp (F) Dec 2004 - Feb 2005	Forecast Potential for Early Season Stewart's Wilt
Freeport	24	Absent
Dekalb	28	Light
Stelle	31	Moderate
Monmouth	30	Light-Moderate
Peoria	31	Moderate
Champaign	32	Moderate
Springfield	34	Severe
Belleville	35	Severe
Rend Lake	37	Severe
Dixon Springs	38	Severe

Kelly Cook (217-333-4424; kcook8@uiuc.edu)

Sweet Corn Observation Trial: Extra-Tender and Super Sweet Hybrids

In the spring of 2004, an extra-tender, super sweet sweet corn observation trial was established at the Dixon Springs Agricultural Center (DSAC). For this project, 10 different varieties, yellow, white, and bi-color, were evaluated for fruit qualities including ear size, weight, and tip fill. The corn was planted on May 21, 2004, using a Monasem planter with in-row spacing of 8 inches and between-row spacing of 30 inches, giving an estimated plant population of 26,000 plants per acre. Herbicide was also applied on May 21, 2004. One-inch seedling emergence was observed seven days later on May 28, 2004. Rows were side-dressed with ammonium nitrate (34-0-0) on June 4, 2004, and again on July 9, 2004. The second fertilizer application was needed because of excessive rainfall in June, and plants looked pale and somewhat stunted. Not only did this field receive excessive rainfall after planting, but no further irrigation was used later in the growing season. Deer and raccoon depredation was observed the week of harvest. Corn was harvested on August 6, 2004, and results are listed in Table 4 in the order they were harvested from the field. Table 5 lists the approximate yield per acre for each variety based on a plant population of 23,000 plants per acre.

Table 4. Sweet corn harvest data, 2004, Dixon Springs Agricultural Center, Simpson, IL.

Variety	Color	No. of Ears	Total Ear Weight (lbs)	Weight per Ear (lbs)	Shucked Weight of 5 Ears (lbs)	Shucked Weight per Ear (lbs)	Ear Width (inches)	Ear Length (inches)	Tip Fill	Rows per Ear
Marai 002	Y	36	25.1	0.70	2.7	0.54	1.90	7.50	10	14
Marai 117*	Y	10	5.4	0.54	2.4	0.48	1.80	6.75	10	18
Millenium	W	44	22.5	0.51	2.6	0.52	1.85	8.25	10	20
372A	W	35	22.9	0.65	3.1	0.62	2.10	7.25	10	16
382A	W	52	42.3	0.81	2.4	0.48	1.90	7.50	10	22
Vision	Y	37	22.2	0.60	2.8	0.56	1.95	6.75	10	18
Xtra Tender	Bi	47	28.4	0.60	2.6	0.52	2.00	6.50	9.8	18
Obsession	Bi	78	47.5	0.61	2.8	0.56	1.90	8.00	10	22
Marai 301	Bi	66	39.6	0.60	2.8	0.56	2.00	7.00	10	18
Marai 327	Bi	65	36.1	0.56	2.7	0.54	1.85	7.50	10	16

* Severe deer and/or raccoon damage observed in this variety. Some damage seen in adjoining varieties but not to the same extent.

Table 4. Approximate yield per acre (based on a plant population of 23,000 plants per acre) and comments.

Variety	Seed Company	Ears per Plant	Boxes per Acre (48 ears / box)	Comments
Marai 002	Centest	0.61	292	Very tender, good shuck cover, nice.
Marai 117*	Centest	0.14	67	Tender, not as sweet as 002.
Millenium	Seedway	0.40	192	Crispy, sweet.
372A	Seedway	0.37	177	Uniform, semi-tender, sweet.
382A	Seedway	0.54	259	Uniform, sweet.
Vision	Seedway	0.30	144	Tender, good.
Xtra Tender	Seedway	0.59	283	
Obsession	Seedway	0.53	254	Good.
Marai 301	Centest	0.48	230	Very sweet.
Marai 327	Centest	0.44	211	Tender, not as sweet as 301.

Bronwyn Aly (618-695-2444; baly@uiuc.edu)

Southern Illinois Pheromone Trap Data for Field Crop and Vegetable Lepidoptera

Ron Hines of the University of Illinois Dixon Springs Ag Center maintains pheromone traps for several field crop / vegetable insects and posts weekly counts on his web site, "The Hines Report," on the University of Illinois Department of Crop Sciences IPM site at http://www.ipm.uiuc.edu/pubs/hines_report/comments.html.

Fruit Production and Pest Management

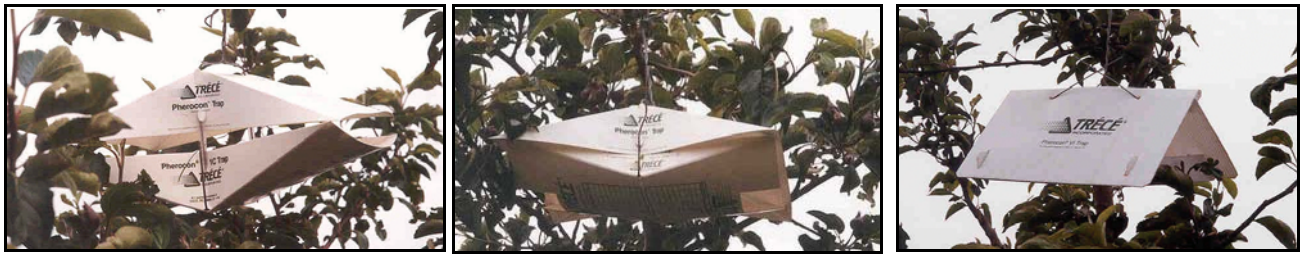
Pheromone Traps for Fruit Insects

This lengthy summary will look a lot like one from this newsletter in March of 2004 ... and 2003 for that matter. It must be that time of year again ...

For apple, peach, and grape growers, NOW is the time to order pheromone traps for key insects if you've not already done so. Although traps are available and useful for monitoring many insects of fruit crops, the ones listed in the table that follows are probably the most important for most Illinois fruit growers. Other pests that may be worth monitoring with traps include dogwood borer, spotted tentiform leafminer, redbanded leafroller, and obliquebanded leafroller in apples and peachtree borer in peaches. Contact me if you want more information on these insects.

What kind of traps should I use?

A few companies manufacture traps, and all have a similar range of designs. Trece is still the best known, so I'm using their models as examples, but there's no reason not to use other traps as long as they are pretty much identical in shape and size, and the lesser-known competitors may provide equal quality for a lower price. The standard sticky trap for most orchard insects has been the Pherocon IC. The inside surface of the bottom – the "floor" of the trap – is coated with stickum or tanglefoot, and the bottom hangs from the top by wires. Spacers on the wires hold the bottom slightly below the top or roof so that there is an opening all along the sides as well as the ends of the IC trap. Although this trap has been used for monitoring flights of most orchard insects, a slightly different trap, Trece's Pherocon ICP, was recommended most often for several years for codling moth trapping. Although the trap top is the same as the one used for the IC, the bottom of the ICP trap is slightly smaller than the IC bottom, and it is attached without spacers so that it slides under the sides of the trap top, leaving a closed trap except for the ends. The ICP trap (or an identical model from other suppliers) is the one I used for several years to monitor codling moth flights around Illinois. A few years ago, Trece began selling a new trap, the Pherocon VI, and it differs from the other two described above primarily in that it's quick to set up (the user doesn't have to assemble the top and bottom with wires), and it uses a separate sticky bottom or "liner" that slides in and out. Its main benefit is that it is MUCH faster to change sticky liners on this trap than it is to change the bottoms of the IC or ICP. I compared these three traps at the University of Illinois orchards in 2002 and found no difference in how many codling moths they captured over the season as a whole. The IC bottoms caught more extraneous things (insects and debris) than the other two, but otherwise there was no difference in their performance. I find the Pherocon VI to be so much easier and faster to handle than the others, so I recommend using it (or a similar trap from another manufacturer) for monitoring codling moth, Oriental fruit moth, grape berry moth, lesser peachtree borer, leafrollers, etc.



From left: Pherocon IC trap, Pherocon ICP trap, Pherocon VI trap.

What attracts moths to traps?

For all the moths typically monitored using sticky pheromone traps, the trap must be baited with a pheromone lure – usually a small piece of rubber or plastic containing a synthetic blend of chemicals that is very similar to compounds used by female moths to attract males. When traps capture male moths, that serves as an indication that females are also present, and mating and egg-laying are occurring. When you order pheromone traps, you also must order lures for the specific insect(s) you wish to monitor. (Sometimes you may order "kits" that come with a combination of traps and enough extra sticky liners and lures

to last the season.) Remember that although you may use the same type of trap to monitor different pests, you must use only a single lure per trap ... it does not work to put lures for codling moth and tufted apple bud moth in the same trap. Depending on the pest species, lures usually last 2 to 8 weeks (suppliers can tell you the effective life of the lures they sell), so you have to order enough lures to last through the whole season.

What about apple maggot?

For apple growers in the northern half of Illinois, monitoring the flight of apple maggot flies also is necessary. Traps for apple maggot flies rely on appearance (the color and shape of a bright red apple) and the use of a food odor ("apple volatiles") instead of a pheromone, and they are designed to capture female apple maggot flies ready to lay eggs on fruit. All the major suppliers of insect traps carry these kinds of traps. Growers should order the red spheres, tubes or tubs of stickum or tanglefoot, and the food lures recommended by the supplier. Apple maggot traps may be used without any food lures; counts are interpreted accordingly.

An apple maggot trap.

How many traps should I use?

There are no precise answers, but in general, for the moths that are pests in Midwest fruit crops, use 2 to 3 pheromone traps per pest species per each block of trees or vineyard up to 15 acres in size. Guidelines often recommend at least 3 traps per pest species for any orchard up to 15 acres in size and 1more trap for every 3 to 5 acres above 15. To monitor 50 acres of trees in 3 or 4 separate blocks, use at least 3 traps per block and at least 9-10 traps total. Always use at least 3 apple maggot traps (red spheres) per block of trees. See the table below regarding placement of traps.

If you have only one block of trees, you may want to order 3-trap "kits" that suppliers package for each of the major pests. Kits with "standard" lures will include 3 lures per trap, but because the lures for most will have to be replaced every 4 weeks. most Illinois growers will need yet another 2 extra lures per pest species per trap to get through the entire season. Suppliers also sell these extra lures and extra "liners" (the sticky trapping surface) for traps. If you operate an orchard larger than 20 to 30 acres, you'll need more traps; don't "mess with" 3-trap kits; contact the suppliers and make plans to order supplies in bulk. "Long-life" lures are available for the codling moth and the Oriental fruit moth (and some other species) ... these lures last 8 weeks between changes and are the best choice for almost all Illinois growers.

Apple growers in southern Illinois ... a few years ago we saw some problems with tufted apple bud moth in orchards treated pretty much exclusively with organophosphates. With greater reliance on alternative chemistries in recent years, this pest has not reached outbreak levels in any Illinois orchards in the last 3-4 years (to my knowledge), but I'm including it in the table on the next page because it still warrants attention in some orchards.

Pheromone trapping guidelines

Crop and Pest	When should you use traps?	Where do you hang the traps?
Apples -- all of Illinois Codling moth	Early bloom through harvest	At eye level or higher, spaced throughout the block, including one somewhere near the upwind edge and one near the downwind edge.
Apples -- south of I-70 Tufted apple bud moth	April 15 through harvest	Same as above for codling moth.
Apples -- north of Springfield Apple maggot	June 1 through harvest	In the outer portion of the canopy of trees on the edge of the block ... VERY visible to adults flying into the block (remove foliage around the sticky red spheres). Hang in border rows or end trees nearest any woods or brush outside the block
Peaches Lesser peachtree borer	Bloom or petal fall through harvest	Same as above for codling moth.
Peaches Oriental fruit moth	Pink through harvest	Same as above for codling moth.
Grapes Grape berry moth	Bloom through harvest	Hang traps on the top trellis wire. Place traps in the outside rows and near ends of rows; concentrate traps on edges near wooded areas.

Suppliers of pheromone traps include:

Supplier	Address	Phone & Fax
Great Lakes IPM	10220 Church Road Vestaburg, MI 48891 email: glipm@nethawk.com On the web at: http://www.greatlakesipm.com	Ph. 989-268-5593 Ph. 800-235-0285 Fax: 517-268-5311
Gempler's	P.O. Box 270 Mt. Horeb, WI 53572 On the web at: http://www.gemplers.com/	Ph. 800-272-7672 Fax: 800-551-1128
IPM Technologies, Inc.	4134 North Vancouver Ave., # 105 Portland, OR 97217 email: info@ipmtech.com On the web at: http://www.ipmtech.com	Ph. 503-288-2493 Ph. 888-IPM-TRAP Fax: 503-288-1887
Phero Tech Inc.	7572 Progress Way Delta, British Columbia, CANADA V4G 1E9 e-mail: info@pherotech.com On the web at: http://www.pherotech.com/	Ph. 604-940-9944 Ph. 800-665-0076 Fax: 604-940-9433
Suterra	213 Southwest Columbia Street Bend, OR 97702 email: agsales@suterra.com On the web at: http://www.suterra.com	Ph. 541-388-3688 Ph. 866-326-6737 Fax: 541-388-3705

Rick Weinzierl (217-333-6651; weinzier@uiuc.edu)

New Fungicides Registered for Use on Vegetable and Small Fruit Crops

Fungicide				Active ingredient (a.i.)		MOA	
Common name	**Trade name**	**Form.**	**Mfr.**	**Name**	**%**	**Code***	**Labeled crops**
Azoxystrobin, propiconazole	Quilt	1.04 + 0.62F	Syngenta	Azoxystrobin propiconazole	7.0 11.7	11, 3	Sweet corn
Azoxystrobin, chlorothalonil	Quadris Opti	0.5 + 5.0F	Syngenta	Azoxystrobin chlorothalonil	4.6 46.0	11, M**	Bean, carrot, celery, cucurbits, onion, potato, tomato
Cymoxanil	Curzate	60DF	DuPont	Cymoxanil	60	27	Cucurbits, potato, tomato
Fenamidone	Reason	500SC	Bayer	Fenamidone	44.4	11	Bulb vegetables, cucurbits, lettuce, potato, tomato
Propamocarb	Previcur Flex	6.0F	Bayer	Propamocarb hydrochloride	66.5	28	Cucurbits, lettuce, pepper, potato, tomato
Pyrimethanil	Scala	600SC	Bayer	Pyrimethanil	54.6	9	Bulb vegetables, grape, pome fruits, potato, stone fruits, strawberry, tomato
Quinoxyfen	Quintec	2.08F	Dow AgroSciences	Quinoxyfen	22.6	13	Grape, cherry
Thiophanate-methyl	Topsin	4.5FL	Cerexagri	Thiophanate-methyl	45.0	1	Apple, bean, cucurbits, garlic, onion, potato, stone fruits, strawberry

* MOA = Mode of Action. Each number or letter indicates a separate mode of action.
** M = multi-site.

Mohammad Babadoost (217-333-1523; babadoos@uiuc.edu)

This issue's words of wisdom ...

Cowboy in distress

A drunken cowboy lay sprawled across three entire seats in the posh Amarillo Theater. When the usher came by and noticed this, he whispered to the cowboy, "Sorry, sir, but you're only allowed one seat." The cowboy groaned but didn't budge. The usher became more impatient: "Sir, if you don't get up from there I'm going to have to call the manager." Once again, the cowboy just groaned. The usher marched briskly back up the aisle, and in a moment he returned with the manager. Together the two of them tried repeatedly to move the cowboy, but with no success. Finally they summoned the police. The Texas Ranger surveyed the situation briefly then asked, "All right buddy, what's your name?" "Sam," the cowboy moaned. "Where ya from, Sam?" asked the Ranger. With terrible pain in his voice, and without moving a muscle, Sam replied, "... the balcony."

University of Illinois Extension Specialists in Fruit and Vegetable Production & Pest Management

Extension Educators in Food Crop Horticulture		
Bill Shoemaker, St. Charles Res. Center	630/584-7254	wshoemak@inil.com
Maurice Ogutu, Countryside Ext Center	708-352-0109	ogutu@uiuc.edu.
Elizabeth Wahle, Edwardsville Center	618-692-9434	wahle@uiuc.edu
Extension Educators		
Mark Hoard, Mt. Vernon Center	618-242-9310	hoard@uiuc.edu
Suzanne Bissonnette, Champaign Center	217-333-4901	sbisson@uiuc.edu
George Czapar, Springfield Center	217-782-6515	gfc@uiuc.edu
Dave Feltes, Quad Cities Center	309-792-2500	dfeltes@uiuc.edu
Russel Higgins, Matteson Center	708-720-7520	rahiggin@uiuc.edu
Campus-based Specialists		
Mohammad Babadoost, Plant Pathology	217-333-1523	babadoos@uiuc.edu
Raymond Cloyd, Greenhouse insects	217-244-7218	rcloyd@uiuc.edu
Kelly Cook, Entomology	217-333-4424	kcook8@uiuc.edu
Mosbah Kushad, Fruit & Veg Production	217-244-5691	kushad@uiuc.edu
John Masiunas, Weed Science	217-244-4469	masiunas@uiuc.edu
Chuck Voigt, Veg Production (& herbs)	217-333-1969	c-voigt@uiuc.edu
Rick Weinzierl, Entomology	217-333-6651	weinzier@uiuc.edu

Return Address:

Rick Weinzierl
Department of Crop Sciences
University of Illinois
1102 South Goodwin Ave.
Urbana, IL 61801

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